

REMARKS

After entry of this amendment, claims 1-30 are pending, of which claims 8, 12, 14 and 15 are withdrawn. Claims 28-30 have been added and find support *inter alia* in the claims as originally filed. Claim 28 further finds support in claim 1 and in the specification, at page 8, line 34 to page 9, line 1. No new matter has been added. Claims have been amended to better comply with U.S. practice. Support is found *inter alia* in the original claims. Claims 5-7, 9, 16 and 20-22 have been amended without prejudice or disclaimer to remove the non-elected subject matter. Claims 1, 6, 9 and 16 have been further amended without prejudice or disclaimer and the amendments find support at page 8, line 34 to page 9, line 1. No new matter has been added.

According to the Official Action dated December 11, 2006, claim 13 is allowable, and claims 7, 13, and 20-22 are free of the prior art.

Claim Objections

The Examiner objected to claims 5-7, 9 and 16-27 for reciting non-elected subject matter. In view of the present claim amendments, the objections are believed to be rendered moot.

Claim Rejection – 35 U.S.C. § 112

Claims 1-6, 9-11, 16-19 and 22-27 were rejected under 35 U.S.C. § 112, first paragraph, for lack of an enabling disclosure and allegedly failing to comply with the written description requirement. Applicants respectfully disagree and traverse the rejections.

Enablement Rejections

Claims 1-6, 9-11, 16-19 and 22-27 were rejected for allegedly not enabling any starch biosynthesis enhancing protein, or fragments or variants of SEQ ID NO: 4. Applicants respectfully disagree. However, to expedite prosecution, the claims have been amended without prejudice and disclaimer to recite the starch biosynthesis enhancing protein as being a protein sharing a sequence identity of at least 80% at the amino acid level with the sequence of SEQ ID NO: 4.

Furthermore, it is submitted that the claims as amended recite a scope of subject matter which a skilled artisan could clearly make and use according to the teaching in the specification. As described in the specification, the starch biosynthesis enhancing protein of the present invention may be prepared by substituting one or more of the amino acids of the polypeptide

sequence SEQ ID NO: 4 while maintaining the properties of a starch biosynthesis enhancing protein. See Specification at page 8, line 34 to page 9, line 1. For instance, such a substitution can be realized by conservative replacement of one amino acid with another amino acid having a property similar to that of the original amino acid. See Specification at page 9, lines 2-4 and 9-13. From this guidance, a person skilled in the art would be directed to mutations least likely to impair function. Methods of introducing such mutations, for example, site-directed mutagenesis and PCR-mediated mutagenesis, are standard techniques readily available and known to those skilled in the art. Furthermore, the screening and selecting a polypeptide with the specified sequence homology while maintaining the desired property of a starch biosynthesis enhancing protein is routine to those skilled in the art and is described in the specification. The need for routine experimentation does not defeat enablement, since it is the quality and not the quantity of necessary experimentation which is relevant. Thus, in view of the amendments, and further in view of the guidance provided in the specification, Applicants respectfully submit that the specification is enabling for the subject matter as now claimed.

The Examiner further noted the alleged unpredictability of the art. Citing to various references, the Examiner concluded that it would be unpredictable to determine the effect of unspecified length and size fragments and variants, or antisense on the starch biosynthesis pathway, commensurate with the scope of subject matter being claimed. In response, Applicants have amended the claims to recite that the starch biosynthesis enhancing protein comprises an amino acid sequence having at least 80% identity with the sequence as set forth in SEQ ID NO: 4. In view of the amendments, reconsideration and withdrawal of this rejection is respectfully requested.

Written Description Rejection

Claims 1-6, 9-11, 16-19 and 22-27 were further rejected for the alleged lack of adequate written description with regard to any starch biosynthesis enhancing protein, or variants, fragments, or homologs of SEQ ID NO: 3, or the corresponding polypeptide sequence SEQ ID NO: 4. The Examiner asserted that the specification fails to describe the claimed genus of sequences. Applicants respectfully disagree, but to expedite prosecution, the claims have been amended without prejudice and disclaimer to recite the starch biosynthesis enhancing protein as a protein sharing a sequence identity of at least 80% at the amino acid level with the sequence of

SEQ ID NO: 4. In light of the amendments, reconsideration and withdrawal of this rejection is respectfully requested.

Claim Rejection – 35 U.S.C. § 102

Claims 1-4, 6, 9-11, 16-19 and 22-27 are rejected under 35 U.S.C. § 102(b) as being anticipated by Barry et al. Applicants respectfully disagree.

Please note initially that the claims as amended are drawn to a starch biosynthesis enhancing protein sharing a sequence identity of at least 80% at the amino acid level with the sequence of SEQ ID NO: 4. Barry et al. disclose an isoamylase from a *Flavobacterium sp.*, which does not share at least 80% at the amino acid level with the sequence of SEQ ID NO: 4. Therefore, it is respectfully submitted that Barry et al. do not anticipate the claimed invention. Reconsideration and withdrawal of the rejection is respectfully requested.

Conclusion

In view of the above remarks and further in view of the above amendments, Applicants respectfully request withdrawal of the rejections and allowance of the claims.

Applicants reserve all rights to pursue the non-elected claims and subject matter in one or more divisional applications, if necessary.

Accompanying this response is a petition for a three-month extension of time to and including June 11, 2007 to respond to the Office Action mailed December 11, 2006 with the required fee authorization. No further fees are believed due. If any additional fee is due, the Director is hereby authorized to charge any deficiency to our Deposit Account No. 03-2775, under Order No. 12810-00125-US from which the undersigned is authorized to draw.

Respectfully submitted,

By 
Hui-Ju Wu, Ph.D.

Registration No.: 57,209
CONNOLLY BOVE LODGE & HUTZ LLP
1007 North Orange Street
P.O. Box 2207
Wilmington, Delaware 19899
(302) 658-9141
(302) 658-5614 (Fax)
Agent for Applicants

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